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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,152	08/01/2005	Katsuyuki Igarashi	S004-5557 (PCT)	2399
40627	7590	08/28/2007		
ADAMS & WILKS 17 BATTERY PLACE SUITE 1231 NEW YORK, NY 10004			EXAMINER NGUYEN, LAUREN	
			ART UNIT	PAPER NUMBER
			2871	
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			08/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/535,152

Applicant(s)

IGARASHI ET AL.

Examiner

Lauren Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-13 and 15-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Receipt is acknowledged of applicant's amendment filed on 08/03/2007.

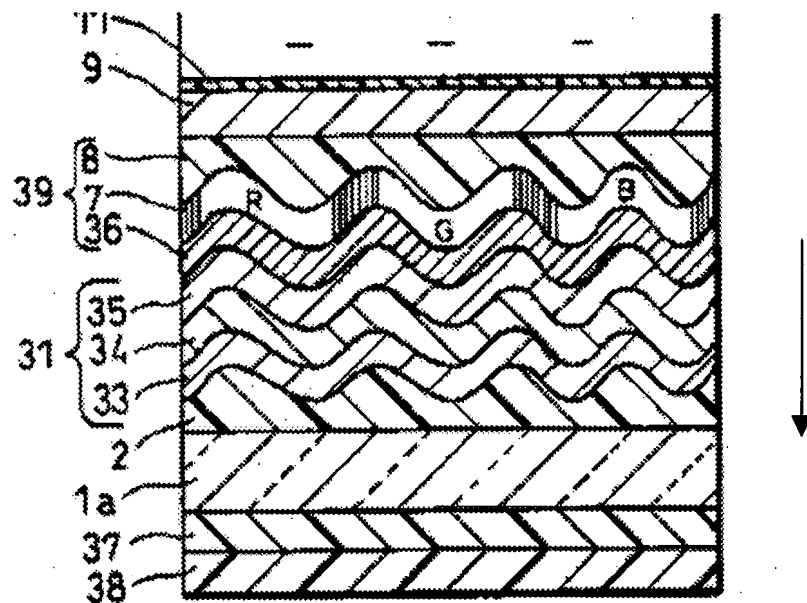
Claims 2,3, and 14 were canceled and claims 15-25 were added. Thus, claims 1, 4-13, and 15-25 are pending for examination.

Response to Arguments

1. Applicant's arguments filed 08/03/2007 have been fully considered but they are not persuasive.
2. The applicant argues (see page 17) regarding [the amended] **claim 1** that **Tanaka** does not disclose/show the recited feature that *"a reflective film disposed over the colored layer on the counter substrate side thereof."* This is not persuasive. **Tanaka** (figure 3, in the direction as shown below) clearly show a reflective film (4) disposed over the colored layer (7) on the counter substrate side thereof. In addition, **Sandullus** (figures 2a and 2b) already teaches a reflective film (2) disposed over the colored layer (4) on the counter substrate side thereof. The claim language therefore does not patentably distinguish over the applied reference[s], and the previous rejections are maintained.
3. The applicant argues (see page 18) regarding the amended **claim 1** that *"in Tanaka, the surface of the color filter substrate has no surface irregularity due to the presence of the leveling film 8 and therefore there is no need to compensate for orientation differences of the liquid crystal molecules at the boundary region as in the case of the present invention as in the case of the present invention."* The examiner merely relies on **Tanaka** for the teaching of forming a transmitting insulating film to prevent the detachment or deterioration of the reflecting plate when it is adhered directly onto a glass substrate (see at least column 2, lines 1-4; column 8, lines

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lines 11-15) and provide an LCD device with improvement in reflectance and enhanced reflection film (see at least column 10, lines 54-56 and column 12, lines 48-53). "The fact that the applicant uses that method for a different purpose does not alter the conclusion that its use in a prior art device would be prima facie obvious from the purpose disclosed in the reference." In re Lintner, 173 USPQ 560. The claim language therefore does not patentably distinguish over the applied reference[s], and the previous rejections are maintained.



Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1 and 4-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sandellus (EP Publication Number 1 416 314) in view of Tanaka et al. (U.S. Patent Number 6,618,107).

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6. With respect to **claim 1**, as shown in figures 2a and 2b, **Sandellus** discloses a liquid crystal display device, comprising: a color filter substrate having a colored layer of a color filter (4) formed thereon; a counter substrate opposed to the color filter substrate; a liquid crystal layer interposed between the color filter substrate and the counter substrate (5; see at least paragraph 0034, lines 1-3); a reflective film (2) disposed over the colored layer (4) and having an area smaller than an area of the colored layer (figures 2a and 2b).

Sandellus discloses the limitations as shown in the rejection of **claim 1** above.

Sandellus does not disclose the reflective film having a thickness of 0.1 to 0.2 μm and a transparent insulating film disposed between the reflective film and the colored layer.

However, **Tanaka et al.**, in at least column 8, lines 62-65, figure 1, discloses the reflective film (4) has a thickness of 0.1 μm and a transparent insulating film (5) disposed between the colored layer (7) and the reflective film (4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reflective film of **Sandellus** with the reflective film of **Tanaka et al.** and combine the LCD device of **Sandellus** with the transparent insulating film of **Tanaka et al.** because such modification would provide an LCD device with enhanced reflection (see at least column 12, lines 45-54); prevent the detachment or deterioration of the reflecting plate when it is adhered directly onto a glass substrate (see at least column 2, lines 1-4; column 8, lines 11-15) and provide an LCD device with improvement in reflectance and enhanced reflection film (see at least column 10, lines 54-56 and column 12, lines 48-53).

4. With respect to **claim 4**, as applied to **claim 1** and shown in figures 2a and 2b, **Sandellus** discloses the reflective film (2) is a metal reflective film (see at least column 4, paragraph 0026,

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lines 31-34). **Sandellus** does not disclose the transparent insulating film is a silicon oxide or a titanium oxide. However, **Tanaka et al.**, in at least column 10, line 6, figure 1, discloses the transparent insulating film (5) is a silicon oxide. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would prevent the reflecting film from deteriorating in the electrodeposition of the color filter (see at east column 10, lines 8-13).

5. With respect to **claim 5**, as applied to **claim 4** above and shown in figures 2a and 2b, **Sandellus** discloses the metal reflective film comprises aluminum or silver (see at least paragraph 0026, lines 7-10).

6. With respect to **claim 7**, as applied to **claim 1**, **Sandellus** discloses the limitations as shown in the rejection of **claim 1** above. **Sandellus** does not disclose a transparent insulating film formed disposed on the color filter, the reflective film being formed on the transparent insulating film. However, **Tanaka et al.**, as shown figure 1, discloses a transparent insulating film (2 or 8) formed disposed on the color filter (7), the reflective film (4) being formed on the transparent insulating film. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would provide protection to the reflective layer and level its irregularities (see at least column 8, lines 54-55 and column 9, lines 1-4).

14. With respect to **claim 11**, as applied to **claim 1**, **Sandellus** discloses the limitations as shown in the rejection of **claim 1** above. **Sandellus** does not disclose a planarizing film formed on and covering the reflective film. However, **Tanaka et al.**, as shown figure 1, discloses a planarizing film (2 or 8) formed on and covering the reflective film (4). It would have been

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obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Sandellus** with the teaching of **Tanaka et al.** because such modification would provide protection to the reflective layer and level its irregularities (see at least column 8, lines 54-55 and column 9, lines 1-4).

15. With respect to **claim 12**, as shown in figures 2a and 2b, **Sandellus** discloses the area of the reflective film is less than 50% of the area of the colored layer (see at least paragraph 0024, lines 1-3). See MPEP § 2131.05.

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

16. With respect to **claim 13**, as applied to **claim 12** above and shown in figures 2a and 2b, **Sandellus** discloses a transparent electrode formed on the color filter substrate; and an opposite electrode opposite the transparent electrode formed on the counter substrate (see at least paragraph 0034, lines 1-3).

17. **Claims 15-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Liu (US 2004/0041965)** in view of **Tanaka et al. (US 6,618,107)**.

18. With respect to **claim 15**, as shown in figure 8, **Liu** discloses a liquid crystal display device, comprising: a color filter substrate having a color filter (18r, 18g, and 18r) disposed thereon, the color filter having a pattern of color filter regions; a counter substrate opposed to the color filter substrate; a liquid crystal layer interposed between the color filter substrate and the counter substrate (see at least paragraph 0028, lines 12-16); an insulating film (24) disposed over the color filter between the color filter and the liquid crystal display layer; and a reflective film

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(26r, 26g, and 26b) disposed over the transparent insulating film between the transparent insulating film and the liquid crystal layer, the reflective film having reflective film regions overlying corresponding ones of the color filter regions, each reflective film region having an area smaller than an area of its corresponding color filter region (figure 8).

Tanaka et al. does not disclose the insulating film being transparent and the reflective electrode having a thickness of 0.1 to 0.2 μm . However, **Tanaka et al.**, in at least column 8, lines 62-65, figure 1, discloses the reflective film (4) has a thickness of 0.1 μm . It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reflective film of **Liu** with the reflective film of **Tanaka et al.** because such modification would provide an LCD device with enhanced reflection (see at least column 12, lines 45-54).

19. With respect to **claim 16**, as applied to **claim 15** above and shown in figure 8, **Liu** discloses the reflective film is a metal reflective film (see at least paragraph 0031, lines 9-11). **Liu** does not disclose the transparent insulating film is a silicon oxide or a titanium oxide. However, **Tanaka et al.**, in at least column 10, line 6, figure 1, discloses the transparent insulating film (5) is a silicon oxide. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Liu** with the teaching of **Tanaka et al.** because such modification would prevent the reflecting film from deteriorating in the electrodeposition of the color filter (see at east column 10, lines 8-13).

20. With respect to **claim 17**, as applied to **claim 16** above and shown in figure 8, **Liu** discloses the reflective film is a aluminum or silver (see at least paragraph 0031, lines 9-11).

21. With respect to **claim 18**, as applied to **claim 15** above and shown in figure 8, the combination of **Liu/Tanaka et al.** discloses a planarizing film (20) disposed on the color filter

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(18r, 18g, and 18r), the transparent insulating film (24) being formed on the planarizing film and the reflective film (26r, 26g, and 26b) being formed on the transparent insulating film.

22. With respect to **claim 19**, as applied to **claim 15** above and shown in figure 8, **Liu** discloses the area of the reflective film (26r, 26g, and 26b) is less than 50% of the area of the colored layer ((18r, 18g, and 18r, figure 8). See MPEP § 2131.05.

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

23. With respect to **claim 20**, as applied to **claim 15** above and shown in figure 8, **Liu** discloses a transparent electrode (see at least paragraph 0031, lines 5-10) formed on the color filter substrate. **Liu** implicitly discloses an opposite electrode opposite the transparent electrode formed on the counter substrate.

24. With respect to **claim 21**, as applied to **claim 15** above, **Tanaka et al.** discloses the transparent insulating film has a thickness of 750 angstrom (see at least column 11, lines 49-51). See MPEP § 2131.05.

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

25. With respect to **claim 22**, as applied to **claim 21** above and shown in figure 8, the combination of **Liu/Tanaka et al.** discloses a planarizing film (20) disposed on the color filter (18r, 18g, and 18r), the transparent insulating film (24) being formed on the planarizing film and the reflective film (26r, 26g, and 26b) being formed on the transparent insulating film.

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26. With respect to **claim 23**, as applied to **claim 22** above and shown in figure 8, **Liu** discloses the reflective film is a metal reflective film (see at least paragraph 0031, lines 9-11). **Liu** does not disclose the transparent insulating film is a silicon oxide or a titanium oxide. However, **Tanaka et al.**, in at least column 10, line 6, figure 1, discloses the transparent insulating film (5) is a silicon oxide. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LCD device of **Liu** with the teaching of **Tanaka et al.** because such modification would prevent the reflecting film from deteriorating in the electrodeposition of the color filter (see at east column 10, lines 8-13).

27. With respect to **claim 24**, as applied to **claim 23** above and shown in figure 8, **Liu** discloses the reflective film is a aluminum or silver (see at least paragraph 0031, lines 9-11).

28. With respect to **claim 25**, as applied to **claim 15** above and shown in figure 8, **Liu** discloses a planarizing film (20) formed on and covering the reflective film (26r, 26g, and 26b).

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

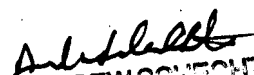
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren Nguyen

August 16, 2007


ANDREW SCHWEITZER
PATENT EXAMINER